



Teaching Resource Guide

Tools for Excellence in Teaching

State Schools for Severely Handicapped, 2004

Teaching Resource Guide State Schools for Severely Handicapped

State Schools for Severely Handicapped teachers use effective teaching practices to guide educational services for the purpose of increasing student achievement while enhancing quality of life and social standing for our students.

Purpose of the Resource Guide

1. Promote effective teaching practices to enhance student achievement.
2. Provide a foundation for quality instruction based upon well-established and research-based instructional practices.
3. Orientate new building administrators, teachers, and supervisors.
4. Increase instructional leadership by administrators.
5. Provide a resource to the State Schools for Severely Handicapped curriculum.

Table of Contents

AT A GLANCE.....	5
ALTERNATIVE AND AUGMENTATIVE COMMUNICATION (AAC).....	12
BASIC ADAPTATIONS TO IMPROVE STUDENT ACHIEVEMENT	14
BEHAVIOR SUPPORTS.....	19
CHOICE MAKING.....	21
DATA BASED INSTRUCTIONAL DECISIONS.....	24
DISCRETE TRIAL FORMAT.....	27
ECOLOGICAL INVENTORY.....	31
ERRORLESS LEARNING	34
ERROR CORRECTION.....	34
GENERALIZATION.....	35
INTEGRATED THERAPY.....	38
INTEGRATION	40
JOB TRAINING	43
LEARNING PROGRESSION	45

MATCH-TO-SAMPLE	48
OFF-CAMPUS INSTRUCTION.....	49
PICTURE CUE.....	51
POSITIONAL CUE.....	52
PROBLEM SOLVING	53
PROMPTS	55
SCHOOL AND FAMILY PARTNERSHIPS.....	58
SENSORY DIET	61
SENSORY INTEGRATION	63
SIZE CUE.....	65
SMALL GROUP INSTRUCTION.....	66
TASK ANALYSIS.....	69
TRANSITION PLANNING.....	70
VISUAL CUE.....	72

AT A GLANCE

Effective Practice	Foundation	Evidence of Implementation
Assistive Technology	<ol style="list-style-type: none"> Any tool that increases, maintains, or improves abilities of the student. Allows teachers and therapists to customize instruction. The technology device or system must be effective and efficient for the student to use. 	<ul style="list-style-type: none"> Tool used allows successful participation of the student. Helps student by-pass problem areas and work with abilities. Least intrusive tool used which draws less attention to the student.
Alternative and Augmentative Communication (AAC)	<ol style="list-style-type: none"> Communication occurs when one individual sends a message and it is received and understood by someone else. The method of AAC is efficient and effective for the student. A person's method of communicating should not be limited to a single method for communication. The AAC systems must be accessible to the student all the time, regardless of the environment. 	<ul style="list-style-type: none"> The AAC method(s) used is always present with the student. The student communicates throughout the day with a variety of messages related to instructional requirements, leisure activities, social interactions and reinforcement. Communication attempts made by the student are responded to as the intended message. Communication is taught in progressive steps. AAC vocabulary is natural to the speech of similar age peers and gender.
Data-based Instructional Adaptations and Decisions	<ol style="list-style-type: none"> To know if the student is learning. To know if the rate of learning is at a level the student will achieve the IEP goal by the end of the implementation period. To identify and implement instructional changes. 	<ul style="list-style-type: none"> At a minimum, weekly data is collected. Student progress can be determined by the data that is collected. Instructional decisions and adaptations are made after evaluating the data. Instructional decisions are implemented and improve student learning.

Effective Practice	Foundation	Evidence of Implementation
Behavior Supports	<ol style="list-style-type: none"> 1. Involves preventing the behavior, teaching communication skills, manipulating the environment, and reinforcing expected behavior. 2. All behavior serves a purpose for the student and sends a message to adults. From the students perspective the behavior is an efficient and effective means to obtain the desired outcome. 	<ul style="list-style-type: none"> • Consistent implementation of supports. • Student has choices during the day. • Behaviors are recognized as messages. • Behavior data are collected and analyzed. • Alternative behaviors are taught.
Choice Making	<ol style="list-style-type: none"> 1. Not simply choosing preferences, but making informed decisions. 2. Results in having some control over one's environment. 	<ul style="list-style-type: none"> • The student makes a selection between at least two options. • Choices are embedded throughout the day.
Discrete Trial Format	<ol style="list-style-type: none"> 1. Used to teach new skills. 2. A series of distinct repeated lessons with clear beginnings and endings. 	<ul style="list-style-type: none"> • Data records reflect mass trials. • High levels of reinforcement are provided and then faded. • Typically, instruction is provided in a 1:1 setting.
Ecological Inventory	<ol style="list-style-type: none"> 1. A tool used to determine the skills needed to function independently in a given environment. 2. Useful when a student will be transitioning into another environment. 	<ul style="list-style-type: none"> • Includes a list of skills and activities that would be performed in a given environment. • Parent input influences the inventory.
Generalization	<ol style="list-style-type: none"> 1. How to apply the acquired skill that is taught. 2. Last step in determining skill acquisition (proficiency across people, materials, locations, and cues). 	<ul style="list-style-type: none"> • Teaching strategies are different from the initial skill training. • Instruction occurs within the normal course of events and in natural settings. • Instruction varies across implementers, locations, and materials.

Effective Practice	Foundation	Evidence of Implementation
Integrated Therapy	<ol style="list-style-type: none"> 1. All disciplines, as targeted in the IEP, teach the skill, rather than remediation of the deficit area. 2. The skill is taught, rather than broken out according to the therapeutic disciplines. 3. The skill is taught by a variety of instructors across multiple environments. 	<ul style="list-style-type: none"> • Instructional activities resemble how the student will perform the skill vs. developmental remediation. • Less fragmented instruction; therefore, it is difficult to distinguish between the therapists and the educational staff teaching strategies. • Instruction is not provided in isolation as a pull out service.
Integration	<ol style="list-style-type: none"> 1. Educational opportunities for students to attend and to actively participate in general education curriculum with age-appropriate non-disabled peers. 2. Reciprocal relationships are developed. 	<ul style="list-style-type: none"> • Relates to goal. • With age-appropriate non-disabled peers. • Outside special education classroom. • Participation over time (longitudinal). • Reciprocal interactions. • Participation in similar classroom activity.
Job Training	<ol style="list-style-type: none"> 1. Outside agencies collaborate with the school to assist with job training and placement. 2. Job training plans are outlined in the transition plan. 	<ul style="list-style-type: none"> • Job training begins in the classroom and is generalized to other locations within the school and community. • Ongoing communication between the work sites and the school is needed. • School staff may need to provide technical assistance/support to assist employers.
Learning Progression	<ol style="list-style-type: none"> 1. Learning can occur in stages. 2. There is a clear learning progression that can be applied to goals. 	<ul style="list-style-type: none"> • Skills are taught in incremental steps. • Students are taught to use higher order thought processes and skills.

Effective Practice	Foundation	Evidence of Implementation
Off-Campus Instruction	<ol style="list-style-type: none"> 1. Access the community to teach the student skills and generalization in the family's natural environments. 2. The teacher provides instruction in the community to design the teaching lesson and periodically is an implementer in the community. 	<ul style="list-style-type: none"> • Active participation in the activity. • Instructional strategies are being implemented. • Instructional staff can express the intended skill being taught in the community. • Data indicates the student demonstrates skill proficiency in multiple settings.
Problem Solving	<ol style="list-style-type: none"> 1. Problem solving skills increase a student's ability to self-advocate. 	<ul style="list-style-type: none"> • Students are taught to solve problems through the missing element format or more traditional formats.
Prompts	<ol style="list-style-type: none"> 1. Method of teaching that results in the student being able to learn a new skill and apply the skill in current and future settings. 	<ul style="list-style-type: none"> • As the student gains skill proficiency, prompts are faded to the least level required to perform the skill. • The fading of the prompts is evidenced in the data collected through instructional change lines.
School and Family Partnerships	<ol style="list-style-type: none"> 1. Realize family members are experts about their child. 2. Parents are asked for input in identifying educational priorities, and are kept informed about the exact progress of their child. 3. Teachers listen to what parents say and respond appropriately. 	<ul style="list-style-type: none"> • The dignity of the student is preserved in written correspondence to the parent. • Family issues and needs are acknowledged and addressed through the IEP.
Sensory Diet	<ol style="list-style-type: none"> 1. A specific schedule of sensory activities designed to help the student remain calm, relaxed, and attentive. 2. A sensory diet can help prevent challenging behavior. 3. Each sensory diet is individualized to meet the student's sensory needs. 	<ul style="list-style-type: none"> • The student is an active participant in the sensory activities. • The sensory diet is composed of specific activities done at specific times throughout the day.

Effective Practice	Foundation	Evidence of Implementation
Sensory Integration	<ol style="list-style-type: none"> 1. There are a variety of signs that indicate a student has a sensory integration dysfunction. 2. Activities are done to integrate the central processing system. 3. These activities result in an increase or decrease in a student's state of alertness and prepares them for learning. 	<ul style="list-style-type: none"> • Collaboration with an occupational therapist may be helpful in determining the type of sensory integration needs a student may have. • The sensory diet is composed of specific activities done at specific times throughout the day.
Small Group Instruction	<ol style="list-style-type: none"> 1. Instruction occurs when 2 to 5 students are engaged in learning together. 2. Teaching strategies are individualized to teach each student in the group. 3. Learning outcomes may or may not be the same for each student in the group. 4. Peer models motivate peers to achieve goals. 	<ul style="list-style-type: none"> • Students are actively engaged in the activity and not just waiting for their turn, or next turn. • Teacher maintains control over instructional materials so students are able to attend to the activity. • Teaching strategies vary among the students. • All students are engaged in the same learning activity.
Transition Planning	<ol style="list-style-type: none"> 1. Required for students between the ages of 14 and 21. 2. A comprehensive plan which drives IEP priorities. It outlines skills, services and linkages to agencies to allow for a smooth system support after graduation. 3. Educational priorities and services are matched to student preferences and abilities with those found in the local community. 	<ul style="list-style-type: none"> • The IEP transition plan is implemented according to the IEP, and the completion of activities is documented. • Targeted transitional skills closely resemble those naturally found in the local community. • Community support services are coordinated with local agencies.

ASSISTIVE TECHNOLOGY

Assistive Technology services are defined as any service that increases, maintains, or improves the capabilities of a person with disabilities. IDEA stipulates Assistive Technology as a service to be provided to students with disabilities. Schools have the responsibility for ensuring the delivery of devices and equipment to students in a special education setting.

Assistive Technology helps students:

- Improve concentration.
- Time on task.
- Improve visual tracking.
- Increase short-term memory.
- Improve discriminatory processing.

It also allows teachers and therapists to customize learning activities to help students learn essential skills. Teachers and related service personnel usually work cooperatively to evaluate available technology for the best match to student abilities and needs. There are many high-tech, as well as low-tech, devices available. Assistive Technology does not always mean expensive equipment.

Low-Tech

Switches

Picture board, student schedule, choice board

Velcro®, Dycem®, built up handles, colored markers in holders, splints, rubber name stamp

Tactile, color, and auditory enhancements, rubbing boards, dimmed lights, visual aids

High-Tech

Computers, Click It, Intelli-Keys, Board Maker, tape recorder

Voice output augmentative communication device

Environmental control, control boxes, call devices

Light boxes, computer visual amplification, computer speaker systems

When selecting appropriate technology for students:

1. Determine the most effective and efficient match between the student's abilities and appropriate technology.
2. Consider the student's cognitive abilities, complexity of the technology, and if it is age-appropriate.
3. Determine student preference for responding, ease of use, training needs, range and flexibility, safety issues, when/if the student will outgrow it.
4. Consider physical location and environment needs of the student.
5. Consider student and family needs.
6. Determine if it is dependable, portable, adaptable, and if it will help the student gain independence.

Assistive Technology must be relevant to how it will help the student attain the IEP goals. The selection must also relate to student need and ability, not teacher preference and experiences. It is about how to help students strive for better ways to do more. Technology is powerful and successful because of the way people use it to fulfill their dreams.

Resources

Flippo, I., Inge, K. & Barcus, J. (1995) *Assistive technology-A resource for school, work and community*. Baltimore: Paul H. Brookes

Parette, H. (1998). Assistive technology effective practices for students. In A. Hilton & R. Ringlaben, *Best and promising practices in development disabilities*, (pp. 205-224). Austin: pro.ed.

Quinn, G. (1998). Assistive technology promotes rapid academic advances. *TECH-NJ*, 9

The Alliance for Technology Access. (1994). *Computer resources for people with disabilities-A guide to exploring today's assistive technology*. Alameda, CA: Hunter House

ALTERNATIVE AND AUGMENTATIVE COMMUNICATION (AAC)

Communication occurs when one individual sends a message and it is received and understood by someone else. Persons with severe and profound disabilities want to control their environment in spite of the difficulty they might have doing so. These individuals may have difficulty expressing their ideas, but this does not mean they do not have anything to say. It is the responsibility of teachers to respect their right and need to communicate, using their expertise, experience, and commitment to make this possible. When a student has an effective way of communicating, they appear more capable than a student who is unable to express him or herself. Communication is the essence of interpersonal relationships. It is the foundation for learning. Each person has the right to:

1. Request or refuse objects, events, and people.
2. Express personal preferences and feelings.
3. Be offered and reject choices and alternatives, change in routine or environment.
4. Request and receive another person's attention and interaction.
5. Receive intervention to improve communication skills.
6. Receive a response to any communication, whether or not a responder can fulfill the request.
7. Have access to AAC (augmentative and alternative communication) and other AT (assistive technology) services and devices at all times.
8. Be spoken to with respect and courtesy.
9. Be spoken to directly and not be spoken for or talked about in the third person while present.
10. Have clear, meaningful, and culturally and linguistically appropriate communication skills.

The more ways a student has to communicate, the more likely they will be able to get across their idea. A student's total augmentative communication system may include such components as spoken words or word approximations, facial expressions, gestures, formal sign language, picture/object communication boards, eye gazing, low tech and high tech aids or devices. Students may need to use different systems depending upon their communication partner's experience and familiarity with a particular system.

Voice-output devices can help students increase expressive skills, improve receptive language skills and develop cognitive skills. For students who cannot yet identify pictures, the constant auditory labeling by the device can help them learn what the picture represents. Voice-output is effective because it calls attention from others and is not easy to

ignore. Also, others in the environment will be more aware when the student is attempting to communicate. Individuals with severe disabilities may be discouraged from communicating because of the great physical effort it takes and because their needs are anticipated by others. The tendency of parents and educators to interpret and anticipate the needs of a student with disabilities may reduce the students' desire to communicate. Students with disabilities may have lost interest in a world in which they do not expect to control. This effect on motivation is termed *learned helplessness*. The ultimate purpose for teaching communication in school is to teach skills and discover systems that will make life outside school more successful for students.

The occurrence of challenging behaviors can often be linked to attempting to communicate. When individuals are unable to adequately communicate their needs or desires, they often resort to displaying their anger and frustration physically. Challenging behaviors diminish when alternative communication methods are learned. The number of successful communication interventions for challenging behaviors reported in research literature is growing.

Resources

Downing, J. (1999). *Teaching communication skills to students with severe disabilities*. Baltimore: Brookes.

Hodgdon, L. (1995). *Visual strategies for improving communication – Practical supports for school and home*. Troy: Quirk Roberts.

Korsten, J., Dunn, D., Foss, T., & Francke, M. (1993). *Every move counts – Sensory-based communication techniques*. San Antonio: Therapy Skill Builders.

McCarthy, C., McLean, L., Miller, J., Paul-Brown, D., Ronald, M., Rourke, J., & Yoder, D. (1998). *Communication supports checklist for programs serving individuals with severe disabilities*. Baltimore: Brookes.

Reichle, J., & Wacker, D. (1993). *Communicative alternatives to challenging behavior – integrating functional assessment and intervention strategies*. Baltimore: Brookes.

Reichle, J., York, J., & Sigafoos, J. (1991). *Implementing augmentative and alternative communication – Strategies for learners with severe disabilities*. Baltimore: Brookes.

BASIC ADAPTATIONS TO IMPROVE STUDENT ACHIEVEMENT

The following is a limited list of adaptations you may consider to increase student achievement.

The principle of partial participation is a common adaptation used to maximize student participation in a lesson or activity. When done correctly, the student consistently participates in each lesson or activity in functional and meaningful ways. Sometimes adaptations are made so that this can occur. Sometimes hand-over-hand assistance is needed. The following is a list of what is not considered effective partial participation.

- Passive:* Student is present during the activity but is not an active participant.
- Myopic:* Limited inclusion of a student in an activity is based upon the person's disability.
- Piecemeal:* Not being consistent in use leads to the learning activity not being meaningful to the student.
- Missed:* The point of partial participation is missed altogether.

When giving instructions, remember to:

- Keep your vocabulary simple.
- Relate new information to information previously learned.
- Tell the student what you expect them to know or be able to do at the end of the lesson.
- Keep directions short and specific.
- Only repeat them after the student has had sufficient time to process what is being asked and has not responded.

When planning your lesson, remember to:

- Use age-appropriate materials.
- Teach skill in natural environments where it will occur.

- Use multiple settings.
- Allow student to choose reinforcers.
- Vary your instructional material.
- Be enthusiastic when teaching.
- Be flexible to meet behavior and/or sensory diet needs.
- Be consistent.

The following lists of *classroom adaptations* are provided as a useful guide to increase student achievement as well as teacher knowledge on a plethora of things to provide and/or control in the classrooms.

MATERIALS:

1. Color code.
2. Color-coded tape.
3. Pictorial adaptations.
 - Directions.
 - Cues.
 - Sequences.
4. Verbal or receptive responding.
5. Glue dots.
6. Make correct responses large in size.
7. Provide dollar bills for purchasing, not larger denominations.
8. Using quarters only for vending machines.
9. Provide auditory and/or tactile cues.
10. Switch to manipulative responses.
11. Break lessons into smaller steps.
12. Laminated response cards.
13. Reduce number of concepts introduced.
14. Highlight key points for students.
15. Allow more time for completion by student.

SKILL SEQUENCING:

1. Rearrange the order for task completion.
2. Provide pictures to demonstrate required sequence.
3. Teach only one sequence to follow and never vary.
4. Select what to order ahead of time.
5. Another person completes the part the student cannot.
6. Follow the actions of another person.
7. Pay attention to natural cues in the environment.

TECHNOLOGY:

1. Therapeutic equipment
2. Switches
3. Augmentative communication devices
4. Splints
5. Computer assisted instruction
6. Block windows and dim lights
7. Visual aides-charts, graphs, pictures

PERSONAL ASSISTANCE:

1. Teach the student to request or signal need for assistance.
2. Provide Peer Tutors.
3. Pair students to complete one task.
4. Take another person's arm for mobility.
5. Have another student carry items.
6. After one student completes a portion of the task, let another do the rest.
7. Schedule time for cleaning desks, tables, and book bags with another student.

PROSTHETIC AIDS:

1. Coin cue cards
2. Picture cue cards for student schedules.
3. Monitor level of language used in teaching.
4. Avoid clutter and visual/auditory detractors.
5. Rubber name stamp.
6. State ID card.
7. Dycem®, boating traction material.
8. Jigs, clamps, Velcro, and elastic.

RULES:

1. Alert students with phrases such as, "This is important."
2. Passing the student a "pick a card" cue.
3. Remove time requirements.
4. Provide time and space to move in the room.

Recording student performance, analyzing data, and making instructional changes are on-going processes that can greatly influence your students' achievement level. Guesses and instincts are not methods to validate progress. By keeping sound data evidence, implementing effective teaching strategies, and making appropriate instructional or motivational adaptations, student achievement is enhanced. IEP goals will be achieved along with improving the student's quality of life.

Resources

Browder, Diane. (1987). *Assessment of individuals with severe handicaps: An applied behavior approach to life skills assessment*. Baltimore, Maryland: Paul H. Brookes.

Dyer, K. & Luce, S. (1996). *Innovations, Number 7: Teaching practical communication skills*. American Association on Mental Retardation, Washington, D.C.

Farlow, L. & Snell, M. (1994). *Innovations, Making the Most of Student Performance Data*. American Association on Mental Retardation, Washington, D.C.

Macfarlane, C. (1998). Databased measurement and evaluation. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp. 239-254). Austin, Texas: pro.ed.

BEHAVIOR SUPPORTS

Functional behavior support is the approach used to teach students more socially acceptable ways of getting their needs and desires met. It is based upon the premise that all behavior is purposeful. From the student's perspective, the behavior is an efficient and effective way to obtain something wanted or needed or to get away from something not wanted. Without intent, adults frequently respond in a way that reinforces the student's challenging behavior. Adults have the ability to change their responses based upon knowledge of the purpose of the behavior. Data is collected to assist with the functional analysis in order to develop an understanding of the purpose of the behaviors. Often, challenging behavior occurs because the student lacks the skills to effectively obtain or reject items, events, people, or environments. Other common causes of interfering behavior include a limited repertoire of behavior, limited choice making abilities and opportunities, inappropriate levels of assistance, environmental influences, and sensory motor integration discrepancies. The analysis of data will provide information needed to adjust the interactions, instruction, and environment in order to teach the student better ways to express himself.

Supporting challenging behavior involves preventing the behavior, teaching communication skills, manipulating the environment, and reinforcing expected behavior. It is proactive, not reactive. Those who provide these supports do so best when they are given team or individualized training specific to their particular student.

The following strategies help support students whose behavior interferes with learning:

- Consistently follow the classroom schedule. This provides for a stable, predictable environment and will support any challenging behavior.
- Teach the student to use a visual schedule to help the student with predictability and understanding of when a change will occur in their routine.
- Teach the student to make choices and allow for more choice making throughout the daily routine.
- Teach the student to communicate the message hypothesized to be the purpose of the challenging behavior. The "new" way of communicating must be as effective and efficient as the "old" challenging behavior. The adult's response to the new behavior must be consistent and bring about what the student truly desires.
- Take only enough data to be helpful in determining if the strategies are effective in increasing appropriate behavior.

- Reinforce the desired behavior by giving the student a highly desired reward. Fade tangible reinforcers as quickly as possible without altering student performance. Not every behavior support necessitates the need for reinforcers. Sometimes the removal of the cause of the behavior results in the elimination of the behavior.
- Vary instruction and assigned tasks. This prevents boredom by maintaining student interest in lessons.

In order to be successful, behavior supports must be consistently implemented across people and locations. When these strategies are based upon the individual's needs, (as determined by the functional analysis of behavior), and are consistently implemented, challenging behavior is very likely to be reduced.

Resources

Kozloff, M. (1994). *Improving educational outcomes for children with disabilities:*

Principles for assessment, program planning, and evaluation. Baltimore: Paul H. Brookes.

Wheeler, J.. (1998). Reducing challenging behaviors in learners with developmental disabilities through the modification of instructional practices. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp. 263-272). Austin Texas: pro.ed.

CHOICE MAKING

Daily life is full of many choices. We are challenged to make choices that include simple to complex decisions. Historically, people with severe disabilities have not been given opportunities to control their environment and make decisions concerning themselves. Therefore, choice making is an important component of any curriculum for students with disabilities to develop skills for more independence and control over life issues. One way to motivate learning is to build in student choices throughout the instructional day. When a student is able to clearly express a preference *between two or more options*, this gives him/her control over the environment so as to receive a desired item.

When a student is allowed and taught how to make choices, the result will be:

- Personal satisfaction.
- Enhanced quality of life.
- Independence to make informed decisions.
- Increased motivation.
- Reduction of challenging behaviors.
- Increased communication.

Choice making is not just choosing a preference. It is making *informed decisions*. As educators, we must remember that a student's choice must not compromise the student's dignity or leave the student in an unsafe situation. There are times, however, when bad choices are needed/allowed to assist the student to learn through consequences.

As the student develops skills in choice making, a sequential process evolves to assist the student to have greater control over options, yet still allows the student to make informed decisions along the way.

Five Methods educators can use to teach choice making skills are:

1. Select options based upon the student's "likes".

- Start instruction with what is important to the student. When the student can choose between items meaningful to him/her, learning is heightened and acquisition of skills is achieved.

2. Allow students to sample options.

- Allow the student to experience each option before selecting. How can a student choose an item if he/she does not know what it is and that it was a choice? Once the student knows options, a choice can be made.

3. Review outcomes.

- Use data collection to determine if choices are based upon student's interests, etc., not how the choices were presented.

4. Choices are embedded throughout the instructional day.

- Choices are more than just selecting reinforcers. They are effective when students are also allowed choices in instructional and leisure activities as well as social interactions.

5. Choices evolve to personal schedules.

- When students become proficient in choice making, independence is enhanced along with increased ability to control their environments. They are ready to learn how to schedule their time and how to follow the schedule they developed.

Types of choices provided in an instructional day could include:

Work

- How much work to complete by a certain time.
- How many tasks to complete by the end of the day.
- Order of the tasks.
- Leisure activities.
- Where to complete the work task.

Schedules

- Student develops daily schedule.
- Student selects certain activities in the schedule.
- Student selects reinforcement activities.

Communication

- When to take a break from instruction.
- When to take a break from an adult or peer.
- Options to signal a desire to end an activity.
- Honoring student communication about emotions and immediate needs.

For students with severe disabilities, choice making is a key component in learning essential skills. Without a means to address this, students will maintain their dependence on others for all functions of life. Their communication needs will not be heard and challenging behaviors will increase. In order for students with severe disabilities to express their preferences and make *informed decisions*, effective educational practices need to include the above methodologies so we may better understand the communicative intent of the students.

Resources

Bambara, L. and Koer, F. (1996). *Innovations number 8: Opportunities for daily choice making*. American Association on Mental Retardation, Washington, D. C.

Downing, J. (1999). *Teaching communication skills to students with severe disabilities*.
Baltimore, Maryland: Paul H. Brookes

Mirenda, P. (1995) *“What’s next?”--Schedule and choice making interventions for challenging behaviors*, TASH Conference, CBI Consultants.

Wehmeyer, M., Martin, J. & Sands, D. (1998). Self-determination for children and youth with developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp. 191-204). Austin Texas: pro.ed.

DATA BASED INSTRUCTIONAL DECISIONS

Student learning is enhanced when data based instructional decisions are used. For this reason, data based instructional decision-making is recognized as an effective practice in education. According to the research, when a teacher does not use data based instructional decisions consistently, student achievement is diminished. There are three main reasons to use data based instructional decisions:

1. To verify the student is learning.
2. To project the probability of achievement by the end date based on the rate learning.
3. To analyze performance and implement instructional changes.

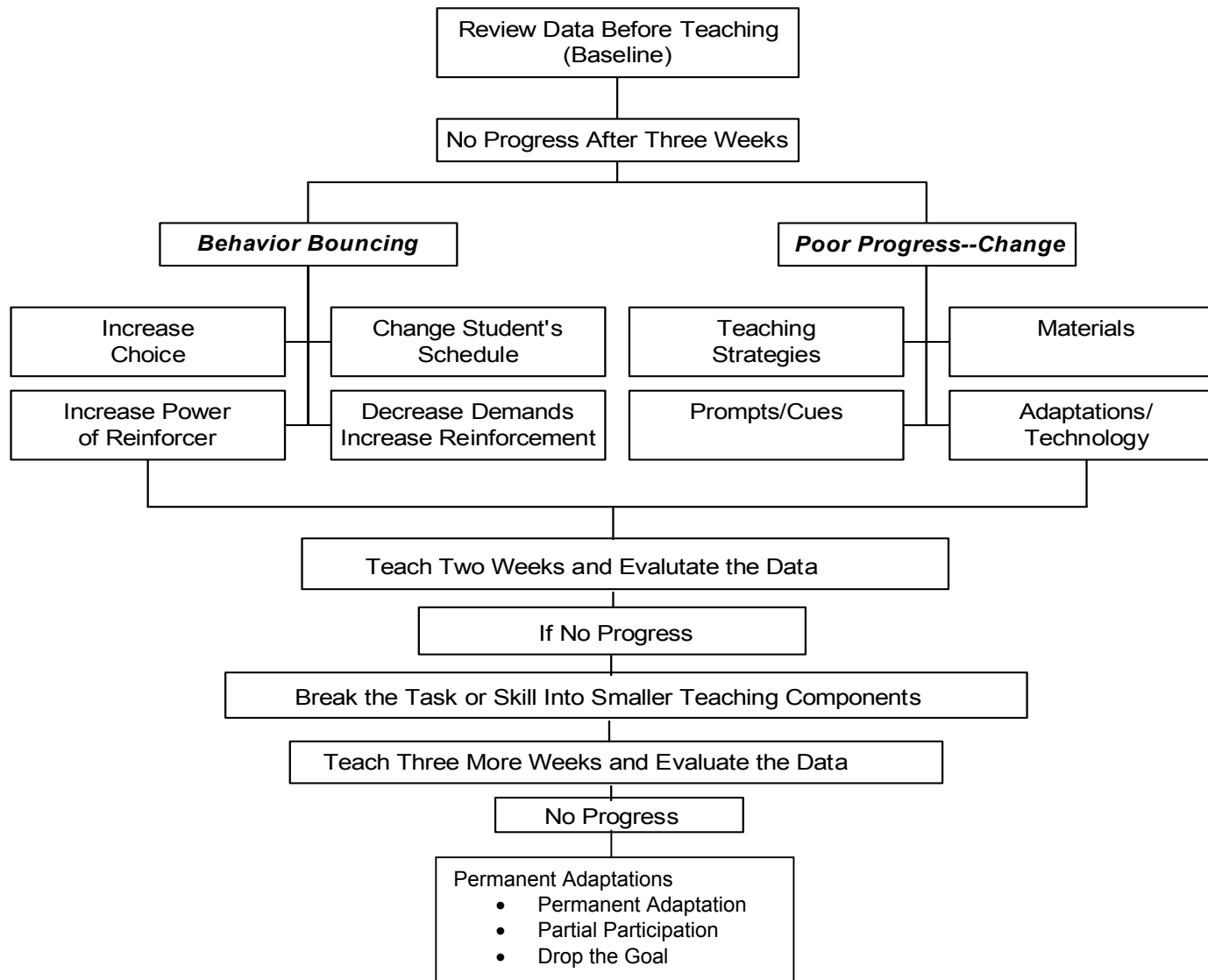
Research also shows that when data based instructional decisions are used effectively, the time used to analyze data is decreased. Therefore, effective instructional changes meet the student's immediate needs and result in the student achieving their IEP goals.

In order for data based instructional decisions to be effective some key elements must be present. These include the following:

1. Data is recorded at least once a week.
2. Data is collected in a variety of settings.
3. Data is summarized, analyzed and instructional changes are made.
4. Instructional changes are implemented and evaluated to determine if they have resulted in improved performance.

The following chart indicates when an instruction change is warranted. It also provides cues as to what type of instructional change may be needed.

Evaluating Data



Continue instruction if one correct response occurred in five days; or if the performance is at or better than the last two days.

Move on to the next instructional step when performance criteria are met, the student can perform the skill fluently, or skill generalization has occurred.

Graphing and charting are the most common types of data collection. Pictorial representations from a graph provide an excellent format to assess progress quickly. When data is summarized, the teacher sees the whole picture of student performance.

Analyzing data is critical in assessing the instruction. Some important factors to consider when looking at the data are:

- If the student's progress is less than 5% for every two weeks, then the student will not master the goal in one year.
- If the student's progress is less than 1% for every two weeks, it will take the student five years to master the goal.

As a result of analyzing the data, instructional changes might be needed.

Resource

Browder, D., Demchak, M., Heller, M., King, D. (1989). An in vivo evaluation of the use of data-based rules to guide instructional decisions. *The Journal for the Association for Persons with Severe Handicaps*, 14, (3), 234-240.

DISCRETE TRIAL FORMAT

The discrete trial format has been used in some form since the 1960's. It has been associated with many familiar, historic names of teachers and researchers such as Lovass, Foxx, Koegel, Brown, Lavigna and Willis, to name a few. Procedures with similar methods have been referred to as precision teaching, compliance training, applied behavior analysis and the clinical/prescriptive method. All of these use the same basic tenets.

Discrete trial format or discrete trial training is a technique that uses a series of distinct repeated lessons with clear beginnings and endings (discrete). These multiple mass trials are usually done one-on-one in a clinical or "distraction-free" environment. This enables the teacher to systematically introduce only those distractions that do not interfere with learning.

Discrete trial methods also use frequent positive rewards to reinforce the possibility of the same response being given the next time the same command is given. Reinforcement can occur after every correct response, but is usually administered on a variable basis or at the end of a prescribed set of trials. When no learning prerequisites are evident, the student is first reinforced for demonstrating "ready" behavior upon command. Then the student is also reinforced with more or different reinforcement for correct responses. This teaches the student compliance to a discriminative command.

In most procedures, data is recorded for every student response. Based on a criterion or a formula, an instructional decision is made after each response or set of responses that determines how the next set is presented. Discrete trial teaching is a rigorous database method.

This method lends itself well to mechanical or sequential tasks. Instruction is usually planned in a careful progression where the difficulty of the task increases and the reinforcement (and, in some cases, prompting) decreases in small, incremental steps. For example, a common instructional progression is object identification and discrimination. With systematic planning, the student is required to simply match, then match in a variety of positions, match with a dissimilar distracter, match with increasingly similar distracters, receptively identify, and finally expressively identify. After simple identification is accomplished, some items with only slight variances are introduced to teach discrimination skills.

The teacher should begin by setting a specific time and place for discrete trial training to occur. The length of the sessions will vary with the child's age and ability.

Because reinforcement will be frequent, an extensive list and wide variety of rewards should be identified before training. The reinforcement should be quickly expended, easily interrupted and usually short in duration. Reinforcement should be representative of many categories, such as social, auditory, edible, motoric, visual, recreational, etc.

There are four parts to the Discrete Trial Format: Establishing set or ready posture, delivering the discriminative command, consequenceing the response, and pausing for the inter-trial interval.

For typical tasks, students should be sitting at a desk or standing at a work surface. The instructors can position themselves either behind or beside the student. This avoids the instructor being in the student's line of vision and inadvertently becoming a distracter. There will be some special tasks that are interactive or require eye contact or mirror imitation where the instructor will sit directly across the table from the student. However, consideration should be given to providing a separate model or interaction partner to free the instructor to deliver the discriminate command and reinforce the response without becoming a part of the assigned task.

Using a separate command or the presentation of instructional materials, the student should "come to attention." This "ready" posture shows the student has achieved a state of calm alertness, is listening, and prepared to respond. Some students will have to be prompted to lay their hands flat on the desk, for instance, if that is a requirement of the "ready" posture. Depending how the student learns and their sophistication, the training may need to start with some basic learning behaviors such as sit, stand, hands down, look at this, touch your (body part), etc. Imitating and actions-in-unison lend themselves to the procedure, and are often quickly acquired by the student. In the beginning a physical prompt is provided to ensure successful completion with every trial. By doing so, the student is always treated as though they are successful and is duly rewarded. As soon as the student can assume a "ready" posture without physical prompts, teaching targeted skills can begin.

SSB

How should **self-stimulatory behaviors** be addressed? Self-stimulatory behaviors (SSB) need to be considered in terms of the desired response, not the "ready" posture. If the student uses hand-flapping and the response is to *verbally identify* a picture, the hand flapping should be ignored. However, if the student

is hand flapping and the desired response is *pointing* to the picture, “hands quiet on the desk” would be considered a required part of the “ready” posture. Sometimes, SSB interferes with attending. However, there are countless examples of students who use SSB, maintain an awareness of their surroundings (particularly preferred events), and respond at the same rate as students who do not use SSB.

After the desired response is carefully defined, a distinct, simple command should be established to cue the behavior. In behavioral terms, this is referred to as the discriminative stimulus or “S_D.” Care should be taken to ensure that the command would only be associated with this one response. If the student has a history of auditory processing difficulties, the educator should consider a unique gesture or presentation routine to cue the behavior.

The teacher should establish an acceptable response interval based upon the student’s typical responding. Usually, the student should “begin” responding to the discriminative command within 2-5 seconds. The actual response may take much longer to complete if it is a complex task. If the student does not *begin* responding in the specified time, all the materials should be removed to reset the instructional field.

After the student responds to the discriminative command, the instructor generally responds in one of two ways. For incorrect responses, extinction is used. The instructor maintains a flat affect and removes the materials swiftly and deliberately. The void of reinforcement will cue the student that the response was incorrect. For correct responses, the instructor enthusiastically praises the student and delivers a predetermined reward to reinforce the correct response.

Finally, after the response is consequated, the instructor signals the end of the trial by removing all stimuli for a short interval. During this 3-7 second interval, the instructor avoids eye contact, talking to the student, or presenting any new media. Oftentimes, the student is continuing to enjoy the reward of the previous correct answer. Within this inter-trial interval, the instructor can record data and prepare materials for the next trial.

The adult should be in control, and the students need only to respond in a passive manner. If used extensively, particularly with withdrawn children, this technique does not promote self-direction or spontaneous initiation. If these are components of the targeted skill, the teacher should plan accordingly.

The sets of mass trials can be very demanding. Students might resist the repeated responding and require stronger and stronger reinforcement to maintain accuracy. It is also very demanding on the educators to be consistent and repetitive with the presentation, as well as to be carefully controlled, giving nonverbal feedback for incorrect responses.

The combination of the instructional progression and repetitive mass trials might not make adequate accommodations for any sensory problems the student may have or that may arise from the session. This can be addressed by embedding self-relaxation techniques into the “ready” behavior before teaching the targeted skill.

Since the instruction usually begins in a sterile environment, generalization has to be carefully planned in the later stages of the progression. With many of the lessons being taught in a distraction-free environment, generalizing to a natural setting might be difficult for some students.

After several sets of repeated trials, the instructor and student often develop a rhythm of set, command, respond, reward, and pause. The precision of the timing and reinforcement is the key to learning.

Resources

Donnellan, A. (1988). *Progress without punishment: Effective approaches for learners with behavior problems*. New York: Teachers College Press.

Donnelly, J. (1996). The pros and cons of discrete trial training: Is the “Lovaas” behavior modification method appropriate for my student? *Access Express*, 10, 1-3.

Foxx, R. (1982). *Decreasing behaviors of severely retarded and autistic persons*. Champaign, Illinois: Research Press.

Foxx, R. (1982). *Increasing behaviors of severely retarded and autistic persons*. Champaign, Illinois: Research Press.

Huntington, D. (1998). Effective instructional interventions for students with developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp.119-126). Austin, Texas: pro.ed

LaVigna, G. & Donnellan A. (1986). *Alternatives to punishment: Solving behavior problems with non-aversive strategies*. New York: Irvington Publishers, Inc.

Myles, B. & Simpson, R. (1990). A clinical/prescriptive method for use with students with autism. *Focus on Autistic Behavior*, 6, 140-153.

ECOLOGICAL INVENTORY

Ecological inventory strategies are discovery tools a teacher uses to determine the skills a student with disabilities needs to be independent in current and future environments. By using these strategies, the educational team can examine object-use skills and adaptations common in a variety of settings, as well as natural cues and correction procedures. This process may also raise more questions about the priorities of the caregivers not previously considered and the availability of resources needed in the community.

Students should be required to demonstrate new skills in more and more environments, as they get older. A younger student may be sheltered and have limited privilege to only a few settings. They may be escorted and cared for by an adult, except when in their bedroom, living room, backyard, or school classroom. The older student should show some responsibility and self-direction in the neighborhood, the doctor's office, the restaurant buffet line, and throughout the school building. This may also extend to a different school with different people, where the rules may vary from what is familiar to them.

There are many natural transitions for students that need to be anticipated in short-term and long-term planning. Many students move from elementary school to junior high. Others move from their family home to a group home or apartment. Without the needed skills and proper exposure to new environments, these changes can be overwhelming. However with preparation and experience, the transition can be seamless and pleasurable. Without early planning for the younger student, educational opportunities may inadvertently be denied to older students who cannot overcome the new challenges.

For some, an ecological inventory has been listing the steps of an activity in a community environment. This is an oversimplification of this series of strategies. Not only is it incomplete; it falls short of the desired intent of ecological inventories. An "activity analysis" may enable the student to participate or perform in an activity in a new setting. Without first learning how to access a new environment and use the natural cues to become independent, the student may never have the opportunity to get to use the desired activity, and all the hard work could be lost.

The following is a summary of the ecological inventory process:

- I. Divide the curriculum into relevant domains.

- a. Some student's educational programs may only focus on 2-4 domains.
 - b. Some domains may need to be listed by sub-domains to clearly address the needed areas.
- II. Determine the environments the student is currently using or might use in the future.
 - a. Current environments and future environments may need to be listed separately, instead of grouped by type, to prioritize the student's immediate needs.
 - b. It is preferred to list environments categorically. Listing the present living situation and future residential options together; for instance, may help identify skills common to both.
- III. Divide the environments into sub-environments.
- IV. List the activities in each sub-environment.
- V. Inventory the specific skills needed by a *non-disabled peer* to perform each of the listed activities.
 - a. This inventory is compiled by recording all the steps a non-disabled peer takes to complete the activity.
 - b. By doing so, peers can later be used as instructional models and can often develop into natural supports.
 - c. This method will also incorporate any natural cues and local eccentricities common only to that peer group.
- VI. Inventory the skills used by the student with disabilities to perform the activity.
 - a. The student with disabilities may use a completely different approach or process to initiate the activity. This may be due to a variety of factors:
 - i. The student's misconception about how others perform the skill(s).
 - ii. The effect of the student's disability on their perception or capacity.
 - iii. The student was taught the skills incorrectly, either formally or informally.
- VII. Conduct a discrepancy analysis.
 - a. Compare the skills manifested by the student with disabilities and those demonstrated by their non-disabled peer.
 - b. Some skill variances may not become expectations for change due to feasibility.
- VIII. Generate an initial adaptation hypothesis.
 - a. The least obvious adaptation should be used, then reduces and eliminated as the student is more proficient.

- IX. Parent Inventory Refinement.
- a. Parent input occurs at this point in the process rather than earlier for a number of reasons:
 - i. The domains and environments identified by the educators give an example for the parent to follow.
 - ii. The educator can easily inventory known environments, leaving the parent to “fill-in” new or little used environments.
 - iii. The sub-environments serve as “idea-starter” for other sub-environments and skills not yet included.
 - iv. When the parents see all the effort put into the planning process, they will be more willing to support the team with their contributions.
 - b. Identifying all domains in the curriculum.
 - c. Reviewing the environments listed for each domain.
 - i. Add environments the student routinely uses that have not be cited.
 - d. Examining the discrepancy analysis and proposed adaptations.
 - i. Review task analysis used to complete common tasks.
 - e. Identify additional activities pertinent to each environment.
 - f. Solicit ideas for possible adaptations.
 - g. Help the parent begin the prioritizing process for the new skills.

Resources

- Brown, L., Branston-McClean, M., Baumgart, O., Vincent, L., Falvey, M. & Schroeder, J., (1970). Using the characteristics of current and subsequent least restrictive environments (LRE) in the development of curricular content for severely handicapped students, *AAESPH Review*, 4, 407-424.
- Macfarlane, C. (1998). Assessment: The key to appropriate curriculum and instruction. In A. Hilton, & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp. 35-60). Austin, Texas: Pro.ed.
- Test, D. W. & Spooner, F., (1996). *Innovations: Community-based instruction support*. AAMR Research to Practice Series, Washington, DC.
- Goetz, L., Guess, D. & Stremel-Campbell, K., (1987). *Innovation program design for individuals with dual sensory impairments*, Baltimore, Maryland: Paul H. Brookes.

ERRORLESS LEARNING

1. Plan a teaching situation so the student will not make an error.
2. Stop the student before an error is made. Prompt the student's response so the student responds correctly.
3. Provide the least amount of assistance to the student so a correct response is made.
4. When the student is able to perform with 40% accuracy; gradually fade to Error Correction.

Example

The student is to put items on the conveyer belt at the grocery store. The teacher may stand to the side of the student to block him/her from dropping items on the floor. If the student appears to begin to place the item in the wrong location, provide prompts so that the correct response is made (and the incorrect response is avoided).

ERROR CORRECTION

1. Stop the student right away so the student knows an error occurred.
2. Return to the beginning of the task, and begin the sequence again.
3. Repeat and provide enough help so the student completes the step accurately.

Example

The student is to put items on the conveyer belt at the grocery store. The instructor stands near by and closely observes the student putting items on the conveyer belt. When the student makes a mistake, the instructor immediately stops the activity. The item is placed back in the grocery cart and the student begins again. This time the instructor provides cues and prompts so that the mistake cannot happen again. Once the task is done successfully, the student performs it one more time with less assistance.

GENERALIZATION

Students with severe disabilities have a difficult time generalizing skills from one location to another, from one form of materials to another, and from one person to another. Therefore, generalization needs to be incorporated within instruction. Notations in student performance data should reflect these variances of locales, media and persons to assess the student's ability to generalize the skills.

Simply defined, generalization is the application of learned skills in a variety of environments and situations. The transfer of knowledge to the novel situation results in appropriate student behaviors and responses. Students with severe disabilities do not perceive identical indicators in different situations as being the same. Since they do not see the relationship between the indicators (cues) and the appropriate response in varying situations, they do not apply those subtle cues to real-life situations and transfer learned skills to a variety of environments. Therefore, skill generalization must be taught.

Controlling and limiting variables can be valuable when introducing a skill for the first time. In contrast, generalization instruction is used when teaching the learned skill across various environments, people or materials.

Skill Acquisition

- Used when teaching a skill in the initial stages of learning.
- Uses cues and adaptations, and then fades them out.
- Highly structured instruction with limited opportunities for error.
- High levels of reinforcement are used.
- Broken into small sequential steps of learning.
- Teacher is actively involved with student.

Generalization Instruction

- Used to teach learned skills across multiple new settings, people, and materials.
- Uses natural cues or permanent cues/adaptations.
- Problem solving techniques are used to correct mistakes.
- Only natural reinforcers are used.
- Instruction is given only to what is necessary to support the student to perform the skill.
- Proficiency and fluency are taught.

Furthermore, research has shown when the student has profound or multiple disabilities or uses challenging behaviors, there are greater difficulties in generalizing skills in the following situations:

- Settings within the school building.
- Home/school versus community settings.
- People encountered within the environment.
- Physical arrangement of materials.
- Physical appearance of materials.
- Applying the knowledge to real situations.

Examples of generalization needs within a school building may include these examples. Does the student know the correct school bus when the order of parking of buses is changed? The student stays in their seat in the classroom, but does the student stay in their assigned seat for a school assembly?

Differences of performance in home/school versus community settings may look like this; the student stays with the group at school, but leaves the group when at the store.

There are many situations that occur within a day that effect a student's ability to perform a skill with a variety of people. A student may do a task with the classroom aide, but not with the teacher.

It is critical to embed this generalization attribute into the instructional strategies. Also, the arrangement of materials affects the student's ability to generalize skills. Examples of this attribute may be seen when the student does not understand how to perform sorting lunch tickets, but can sort utensils in the home living room.

Another common generalization problem is the physical appearance of materials. The student may be able to read survival signs at school, but is unable to read them in real situations.

When teaching to generalize skills, instruction should occur within the normal course of events. Students will not acquire skills, and they will have more difficulty in generalizing the skill if it is taught outside the normal context of how it occurs. It is important that the student be taught skills in a variety of environments, with a variety of materials, with a variety of people and within the natural routine of the day. As a result of teaching students to generalize skills, the students will have increased opportunities to interact with the community. Dependence on prompts and cues will be reduced and the student's quality of life will be improved. Acceptance in the community will be enhanced and the student will be gratified by their ability to control life situations.

Resources

Horner, Robert H.; Dunlap, Glen & Koegel, Robert L. (1988). *Generalization and Maintenance: Life Style Changes in Applied Settings*. Baltimore, Maryland: Paul Brookes.

Huntington, D. (1998). Effective instructional interventions for students with developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp.119-126). Austin, Texas: pro.ed

Steere, Daniel E. (1997). *Innovations Number 10: Increasing variety in adult life: A general-case approach*. American Association on Mental Retardation, Washington, D.C.

INTEGRATED THERAPY

Integrated therapy is an effective practice in which all appropriate services are incorporated into instruction in the classroom and other natural settings. The classroom teacher implements the educational program using creative and functional lessons in a variety of environments with needed professional expertise to support all areas of the students' instructional programs. What was typically provided as a pull out service is now incorporated into the regular, ongoing instruction?

Through this approach, beneficial and appropriate instruction can be provided continuously throughout the students' daily routines, even when the therapists are not directly involved with each instructional activity. Research has shown integrated therapy to have a positive impact on student learning due to the following conditions:

1. Less fragmented instruction – all staff that teach a student provide a coordinated, on-going, continuous instructional program for that student.
2. Assessing student performance in actual daily routines in a variety of natural environments allows for a more accurate determination of service needs and priorities.
3. Opportunities for sharing a vast amount of expertise and knowledge enables all members of the team to recognize the individual needs of students and to design and to implement more appropriate and effective instructional goals to meet those needs.
4. More opportunity for creative learning activities.
5. An environment of shared responsibility for the instructional program of each student.
6. Opportunities for all staff to become valued participants in the overall program of each student – specifically, the development and implementation of a discipline-free, educationally based individual program for each student; and an opportunity for more quality involvement of all students and staff within any given instructional activity.

Resources

French, C., Gonzalez, M., & Tronson-Simpson, J. (1991). *Caring for people with multiple disabilities*. Tucson, AZ: Therapy Skill Builders.

Orelove, F., & Sosbey, D. (1987). *Educating children with multiple disabilities: A transdisciplinary approach*. Baltimore, MD: Paul H. Brookes.

Rainforth, B., York, J., Macdonald, C., Salisbury, C. & Dunn, W. (1992). *Collaborative teams for students with severe disabilities: Integrating therapy and educational services*. Baltimore, MD: Paul H. Brookes.

INTEGRATION

Integration is defined as opportunities for students who experience a disability to actively participate in the general education curriculum with peers of a similar age. Integration is not a luxury that is added on when there is sufficient time and money, readily available opportunities and designated personnel for that sole purpose. Integration is a service delivery model that addresses a specific need in almost every student's IEP at some point in his or her school career.

Integration entails a process of appropriately choosing and using available resources to link the student to opportunities for learning in the regular education setting. The following tools may be helpful to the team in identifying the optimum setting or finding teaching opportunities in existing activities:

- An Ecological Inventory will catalog all the skills necessary to function in a new setting. Since the inventory and associated process emphasizes the environment, it is found helpful when the student has physical challenges or mobility concerns. It may help plan orientation maps, seating alternatives, positioning concerns or health and safety issues.
- An Interaction Survey or Communication Script will provide examples of the language and communication demands in a new setting. These surveys or scripts usually identify the typical communication partners, possible topics of discussion, acceptable greetings, and rules of contact. These tools are particularly useful for addressing social skills, vocabulary selection, language expansion, the use of challenging behaviors, team building, and identifying peer tutors or other natural supports in the setting.
- An Activity Analysis is useful in finding “functional” environments, instead of instructional settings where teaching already occurs. This analysis emphasizes where skills are being “applied”, as opposed to being “learned.” In some situations, non-disabled peers have learned (formally or informally) a skill they are using in everyday life. Natural teaching activities may not occur for the skill, particularly for older students. In these circumstances, an activity analysis can show where they are being applied, and provide opportunities for new learners to practice the skill.

Effective integration includes these factors:

1. Provides age-appropriate and meaningful instruction to all students.
 - A student's IEP identifies those goals that need to be taught in an integrated setting. The general education setting is carefully chosen based upon the existing opportunities to teach those skills.
 - It is the role of the special education teacher to inform the general education teacher of the targeted goals. Together, they plan how the student will be taught these skills when in the integrated setting.
 - The general education curriculum is adapted to meet the students' needs. Careful planning is completed to analyze the curriculum and environments the students will experience. Then, the special education teacher identifies how these learned skills might be infused throughout the integration experience.
 - Quality instruction incorporates opportunities for students to learn across a wide range of people and environments. Some students with severe disabilities may not perceive or assimilate learning skills by casual observation; however, provided structured large and small group instruction they will demonstrate knowledge of almost half of the concepts taught to other students and not directly or individually to them. Cooperative work groups and interactive learning activities have an even greater benefit.
 - Gives students with disabilities the opportunity to generalize skills. Generalization factors, such as a different instructor, a different location, different materials and fewer or different adaptations may have to be introduced gradually or systematically to ensure success.
2. Interaction over time that fosters reciprocal relationships.
 - Integration is not just one or two visits to the general education program. Rather, it is participation over time that fosters reciprocal relationships between students with severe disabilities and their non-disabled peers.
 - Integration helps the student broaden their support system of peers and adults in present and future settings.
 - Integration not only helps the student become more independent, but also helps all students to become interdependent with each other.
3. All students perform analogous roles in class.
 - Some students may not be able to participate the same way as others during integration, but that should not prevent any student from performing an integral role in the group dynamics.
 - Where appropriate, the *principle of partial participation* can be used. Instead of a complex interaction being viewed as a single task, it can be broken into parts so that all the students can perform the part they do best or need to learn to do better.

- The strengths of the student are considered in identifying areas where the student is able to participate in the class. Opportunities are built on that groundwork, and acquired skills become new strengths.

Teamwork is needed to facilitate the planning and implementation of the integration for each student. This entails collaboration of special education teachers, general educational teachers, teacher aides, counselors, related services staff, supervisors for instruction, principals, and other administrators. Collaboration among the teachers is required to plan experiences and provide instruction on targeted skills within the general education program. Special education teachers communicate frequently with the general education teacher and vice versa on expected outcomes of teaching, adaptations and supports. While periodic (daily, weekly, monthly) communication is vital, longitudinal communication is essential so that all the team members can see the progress and track the focus of the effort over time. Since integration involves a multiple-year commitment, a timeline, chronicle, scrapbook, checklist or journal can be helpful in documenting past and present efforts.

Full, successful integration cannot be achieved overnight. It is an evolving course of action over time. To be effective, the instructional team should make a commitment to a multiple-year plan. As a result of integration, people see the student as a person first, rather than the impact of the disability. Successful integration results in the student achieving goals, generalizing skills, being accepted by peers, and earning membership as part of the student body.

Resources

Fullwood, D. (1990). *Chances and choices: Making integration work*. Baltimore, Maryland: Paul H. Brookes.

Nisbet, J. (1995). *Natural supports in school, at work, and in the community for people with severe disabilities*. Baltimore, Maryland: Paul H. Brookes.

Thompson, B., Wickham, D., Wegner, J., Ault, M, Shanks, P. & Reintson, B. (1996). *Handbook for the inclusion of young children with severe disabilities*. Learner Managed Designs, University of Kansas, Lawrence, Kansas.

JOB TRAINING

Extensive and generalized job training has long been considered an effective practice to ensure individuals who are disabled succeed in the work environment. Two agencies that can assist with job training and placement are the regional centers of Missouri Department of Mental Health and Vocational Rehabilitation Services. There are eleven (11) regional centers located throughout the state. Each regional center is dedicated to providing a service coordinator to eligible individuals who can assist with transportation and other needs associated with finding and keeping a job. Twenty-six (26) Vocational Rehabilitation (VR) offices are located throughout Missouri. VR services include 1:1 counseling/guidance, training/retraining, and other assistance to help individuals with disabilities achieve gainful employment. Together, parents, school staff, the service coordinator, and VR counselor develop a job-training program. This program is documented in the students transition plan located in the IEP. The student's job training program should be explained in detail, including the agencies/persons who are responsible for all facets of the student's job opportunities. To appropriately accommodate for the diverse needs of individuals with disabilities, career preparation programs should include the following vital components.

- Provide assessments/observations/career inventories to determine student preferences, strengths and weaknesses. The school and vocational rehabilitation usually do this.
- There is a continuum of employment opportunities that range from sheltered workshops to supported employment to competitive employment. Based upon the results of the assessments, appropriate job sites and employers should be contacted for an initial visit and for arranging possible job training opportunities.
- Instruction for specific job training begins in the classroom. New job skills can be generalized to other locations within the school building and community.
- School staff should be familiar with the skills needed for students to be successfully employed in a workshop and other settings. Ongoing communication between the work sites and the school is fundamental in providing a successful job-training program for each student.

- The school staff and VR counselor may need to provide technical assistance/support to assist employers in integrating students with developmental disabilities into their work environments. This support should be faded out, as appropriate.

Resources

Brown, J., Zager, D., Brown, P., & Price, L. (1998). Transition practices for students with mental retardation and developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities*. Austin, Texas: pro-ed.

McDonnell, J., Mathot-Buckner, C., & Fergusen, B. (1996). *Transition programs for students with moderate/severe disabilities*. New York: Brooks/Cole Publishing Co.

Moon, S., Inge, K., Wehman, P., Brooke, V., & Barcus, J. (1990). *Helping persons with severe mental retardation get and keep employment – Supported employment issues and strategies*. Baltimore, MD: Paul H. Brookes.

Wehman, P., Moon, S., Everson, J., Wood, W. & Barcus, J. (1988). *Transition from school to work, New challenges for youth and severe disabilities*. Baltimore, MD: Paul H. Brookes Publishing Co.

LEARNING PROGRESSION

A common tenet in education has been teaching rudimentary skills first and then building other skills and more complex processes on that foundation. Young learners master concrete concepts. As they have more learning experiences, older learners acquire more abstract skills. What varies from one teaching philosophy to another is the logic of the progression. For some simple, mechanical tasks such as shoe tying the learning progression is obvious and similar for a majority of the people surveyed. For teaching more complex skills such as reading or organizing a schedule, there can be an overwhelming number of variables to classify before establishing a sound learning progression.

Forefathers of modern education have somewhat clarified this task. In 1948, representatives from various colleges formed a committee to establish taxonomy of learning domains. The taxonomy identified three domains to describe each of the types of learning observed: cognitive, affective and psychomotor. Benjamin Bloom, along with four other lesser-known authors (Englehart, Furst, Hill and Karthwohl), spent the next eight years classifying all educational goals in the cognitive domain alone. For the cognitive domain, it gave a clear progression that can be applied to all goals:

Knowledge → Comprehension → Application → Analysis → Synthesis → Evaluation

The following is an overview of the completed taxonomy. This table attempts to provide an example of a behavior objective that could be written for a skill in each sub-domain. It also lists other verbs that might be used in other goal statements for that area.

Domain: **COGNITIVE**

<u>SUB-DOMAIN</u>	<u>Sample</u>	<u>Verbs</u>
KNOWLEDGE	Recites safety rules	Lists, matches, selects
COMPREHENSION	States problem	Gives examples, explains
APPLICATION	Uses a basic machine/toy	Operates, computes
ANALYSIS	Completes a pattern sequence	Compares, discriminates
SYNTHESIS	Combines parts into a whole	Creates, retells, arranges
EVALUATION	Picks a solution	Describes, states conclusion

Domain: **AFFECTIVE**

SUB-DOMAIN

RECEIVING EXPERIENCE
RESPONDING TO EXPERIENCE
VALUING
ORGANIZING
INTERNALIZING VALUES

Sample

Listens and repeats name
Participates in a group
States a consistent opinion
Adheres to time constraints
Acts predictably/cooperatively

Verbs

Asks, chooses
Assists, greets, presents
Invites, justifies
Orders, prepares, shifts
Performs, practices, serves

Domain: **PSYCHOMOTOR**

SUB-DOMAIN

PERCEPTION
READINESS TO ACT
COMPLEX OVERT RESPONSE
GUIDED RESPONSE
ADAPTATION
CONFIDENT PROFICIENCY

ORIGINATION

Sample

Catches a thrown ball
Attempts a new process
Operates a computer
Repeats demonstration
Combines tasks to make a schedule
Uses an electronic communication device
Creates a new movement pattern

Verbs

Detects, identifies
Begins, moves, proceeds
Assembles, builds, dismantles
Trace, copies, follows
Constructs, designs, composes
Fastens, mixes, manipulates

Develops, solves, individualizes

One of the most familiar and illustrative examples of learning from concrete to abstract is acquiring reading skills. The beginning learner has to first acquire knowledge about the components of the lexicon. To give meaning to words, particularly nouns, the teacher begins by labeling and describing objects. With this knowledge, the student matches like objects (cognitive), chooses an object from an array (affective), and receptively identifies the object (psychomotor). Next the student demonstrates comprehension of the object label through a variety of teaching activities.

The objects are associated with color pictures and/or printed words. The objects and pictures are faded and words become a meaningful abstract representation of the objects. The teacher teaches the student to apply, analyze, synthesize, and evaluate nouns, verbs, adjectives, and then combinations of words until they can read text with understanding.

Resources

- Bloom, B.S. (1956). *Taxonomy of educational objectives: The classification of educational goals; Handbook I, cognitive domain*. New York, New York: Longmans & Green.
- Fischer, M. (2003) "No Child Left Behind" places premium on reading instruction in content areas. Education World Publishers: Copyright 2003 Education World.
- Rosenthal-Malek, A. & Bloom, A. (1998). Beyond acquisition: Teaching generalization for students with developmental disabilities. In A. Hilton & R. Ringlaben, Best and promising practices in developmental disabilities. Austin, Texas: pro.ed

MATCH-TO-SAMPLE

1. Present the sample and provide exact samples to match.
2. To fade this type of instructional cue, gradually change the sample so it is similar, rather than being the exact same.
3. Then provide a variety of similar items to match to the sample.

Example

1. The student matches identical forks.
2. The student matches forks of different colors.
3. The student matches a variety of forks.
4. The student matched a variety of forks vs. spoons.

OFF-CAMPUS INSTRUCTION

Students with severe disabilities have a difficult time generalizing skills from one locale to another, from one form of materials to another, and from one person to another. Therefore, generalization must be incorporated within instruction. The data must reflect these variances of locales, media and persons to assess the student's ability to generalize the skills. An important point that needs to be stressed with regard to off-campus instruction is that *behavior cannot be a reason to exclude any student*. Many times the functionality of the community site, the intrinsic reinforcing value of the activity, and the novelty of the instruction reduces the likelihood that challenging behaviors will occur. In addition, it is the responsibility of the teacher to help the student learn to function in the community sites without behavior outbursts, and in order to learn to do this, the student must be provided such opportunities.

Effective off-campus instruction includes the following:

1. Using the local community to teach student skills needed to function in the school, home and community environments.
2. Expanding student knowledge bases by frequent opportunities within the curriculum to apply newly acquired skills out in the community.
3. Enhancing interpersonal and communication skills.
4. Providing training in multiple settings, and incentives to attain function goals.
5. Providing necessary modifications and accommodations for each student to be successful.
6. Implementing functional activities in real-life experiences that are naturally occurring in age-appropriate environments.

The main emphasis is on instruction while in the community. Off-campus instruction is not a field trip to the community, or exposure to the application of a skill in the community. The same instructional strategies used in the classroom are found

while teaching in the community. Instruction while in the community is more difficult than in the classroom because the teacher needs to provide that instruction without drawing unnecessary attention to the student's disability.

The frequency of instruction must also be considered. It is better to concentrate teaching a skill in the community so the skill is learned, than it is to spread out teaching over the course of a year. The same is true for teaching leisure skills in the community. Once the student can perform the skill in the community according to goal criteria, then additional trips are not required, and the goal should be considered mastered. The leisure skills taught in the community must reflect the student's family leisure activities or those activities the parents will help the student to access.

Resource

Huntington, D. (1998). Effective instructional interventions for students with developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp.119-126). Austin, Texas: Pro.ed

PICTURE CUE

1. Provide representational, two-dimensional pictures that will be used to represent actual objects.
2. Place pictures in the appropriate order for the student to follow.
3. Repeat the procedure until the student is able to complete portions of the task without using picture cues.

Picture cues can be helpful during routines such as brushing teeth. The student could look at a photograph of himself completing each step of brushing his teeth. Below is a task analysis of the photographs a student might use to complete this routine.

1. Get toothbrush
2. Get toothpaste
3. Put toothpaste on the brush
4. Turn on cold water
5. Put toothbrush under water for just a second
6. Turn off the cold water
7. Put toothbrush in mouth and move over teeth
8. Spit
9. Turn on cold water
10. Rinse mouth
11. Rinse toothbrush
12. Turn off water
13. Put toothpaste away
14. Put toothbrush away

POSITIONAL CUE

1. Place the possible responses in front of the student (limit responses).
2. Place the correct response closer to the student.
3. Repeat the procedures until the correct response is equal to the other response option.

Example

The teacher places the letter “a” directly in front of the student. Letters “l” and “m” are to the side of the student and almost out of reach. As the student responds correctly, letters “l” and “m” are moved closer to letter “a”. Eventually, all of the letters are on the same line of vision.

PROBLEM SOLVING

People who care for children with severe disabilities frequently anticipate their needs, requiring little or no effort on the part of the child. This also results in the child not having opportunities to make personal decisions. People with significant disabilities often do not learn to solve problems in even the simplest of situations, because they have not been taught how. Below are two basic ways to teach problem solving skills.

Missing Element Format

The Missing Element strategy checks comprehension, promotes communication, and teaches problem solving. During a familiar lesson, the instructor will leave out one important step, ingredient, or material. The students who do not recognize that something is missing will be prompted.

For example, the instructor will call the roll, and ask the students if they want a school lunch. One student is purposefully skipped. The instructor states the roll has been called, and the lunch count is finalized. Emphasizing the omission, the instructor states, "We have "x" students here, and we need "x" lunches. A pause follows, and then a question is posed about the count. The instructor pauses for any response, and then repeats the names present. With prompts, the instructor leads someone in the class to respond that one student's name is missing from the list. Students will need a means to communicate such as an alternative communication device, bell, or a raised hand signal for this strategy.

Problem Solving Steps

Students can be taught how to use the traditional steps of problem solving. When first teaching these steps it may be necessary for the teacher to model problem solving by verbally and/or physically working through each step.

1. Identify the problem.
2. Identify possible solutions.
3. Evaluate the pros and cons of each solution.

4. Choose a solution.
5. Implement the solution.
6. Evaluate the outcome and determine if a change is needed.

Example (assuming this student is nonverbal):

1. My teacher forgot to ask me if I want to paint with a paintbrush. I wanted a brush, but now I have to paint with a sponge.
2. I can scream and hit my teacher. I can raise my hand, so that she knows I need something. Or, I can sit here and do nothing.
3. Screaming and hitting will get me in trouble, and she will not know what I need. If I do nothing, the teacher might punish me for not participating or exclude me from the activity because she thinks I am sick. If I raise my hand maybe she will think I need something.
4. The best solution is to raise my hand.
5. I raised my hand.
6. When I raised my hand, my teacher asked if I needed something. Then I looked at my classmate painting with a paintbrush. She gave me a paintbrush, and said "Thank you for raising your hand."
7. Raising my hand and looking at my classmate worked. I got what I wanted.

Resource

Chandler S. & Pankaskie S. (1997). Curriculum design. In P. Wehman and J. Kregel's *Functional curriculum for elementary, middle, and secondary age students with special need* (pp.135-142). Austin, Texas: pro.ed

PROMPTS

Teachers commonly use three types of prompts: verbal prompts, gestural prompts, and physical prompts. Prompts are defined as extra assistance provided by one person to promote acquisition of a skill or action by another person. When used correctly, a prompt is delivered immediately after the instructional command is given. The function of the prompt is to give the student more 'information' about executing the instructional command. By adding a comment, pointing in the desired direction, gesturing toward the targeted area, or moving a student's trunk or limbs in the appropriate direction for completion, the student has a greater likelihood of being successful. With the proper timing, the student also has less opportunity for making a mistake.

Prompts are used in teaching when providing guided practice. The prompt adds the guidance the student needs in learning the steps not yet mastered. When guided practice is used in a lesson, the lesson should also provide an opportunity for independent practice so the student can learn to perform the skill without the prompt.

Prompts can also be used when testing what a student has learned. The student partially participates in the prompted step, and the instructor participates with the student by inserting the prompt to get past the difficult step to the rest of the sequence. The test procedures specify what type of prompt is used and which step is prompted. The data should always show the student's ability to perform the skill, not the teacher's ability to deliver a prompt. When the student learns to perform the step without the prompt, a change line is drawn in the data and the test procedure is rewritten without the prompt description.

Verbal prompts and gestural prompts are generally considered to be less intrusive than physical prompts. Verbal prompts and gestures can be recorded and modeled for use by another instructor. Auditory prompts can be delivered from across the room and even telecommunicated over a greater distance, if needed. Since talking and gesturing are used in so many social situations, they are thought of as being natural and less stigmatizing.

Physical prompts require a close proximity, are more difficult to deliver consistently over time, and are harder to graduate from forceful to light systematically. Some students have sensory problems that make it difficult for instructors to stay close and start or maintain physical contact without setting off a defensive reaction. For these reasons, physical prompts are commonly considered more intrusive.

This hierarchy of prompts signifies the need to assess and monitor the student's independent performance with the least intrusive prompt. When beginning a new skill, the teacher will use a slight verbal prompt or gesture in the beginning and appraise its effectiveness over an interval of time. If the prompt does not ensure successful performance of the skill, a different prompt will be tried and assessed. Throughout the learning progression, the student will be given opportunities for independent demonstration of the skill *without* the prompt to test its effectiveness. Fading occurs with the systematic removal of the instructor's assistance. As the skill is acquired, the teacher will plan how to diminish the prompt by strength or frequency until it is no longer needed.

Many authors refer to what is known as a "full physical prompt." This involves the teacher molding the student's body into a position and moving it through the actions necessary to perform the skill. It further assumes the student is not resisting and is attending to the task being completed with some understanding of its intended purpose. This is not, however, a true prompt. By definition, a prompt is only assistance that ensures success of the student. The point at which the instructor is planning and performing the entire skill, the student is not participating in a way that can be credited as successful performance. This hand-over-hand approach, like modeling or demonstration, may have many benefits. As a neural-developmental therapy technique, it may help the student overcome some lack of sensory integration. There is no doubt that the student experiences some proprioceptive input from the movement. While it may help the student prepare for the experience, "full physical prompting" is not considered part of skill acquisition.

Verbal or gestural prompts are occasionally paired with physical prompts. The rationale is that when the physical prompt is diminished or discontinued, the instructor can still use the associated words or gestures for prompting, if needed. As a general rule, this is not a recommended practice. If a verbal prompt has been found to be ineffective, pairing it with a physical prompt will not make it suddenly more effective. Pairing prompts complicates the instructional process unnecessarily and doubles the number of prompts that have to be faded for independence. Using paired prompts can also send too many or mixed messages to the student.

Habitual use of a prompt without ongoing assessment will create an unwarranted dependency on the prompt. When a student becomes a "prompt junkie", instead of aiding in the performance of the skill, the prompt signals a stop-and-wait response. Fading, using a hierarchy, and opportunities for independent practice will ensure that a prompt provides only the assistance needed for success.

Resources

Brown, L., Sailor, W., & Wilcox, B. (1980). *Methods of instruction for severely handicapped students*. Baltimore, Maryland: Paul Brookes Publishing.

Donnellan, A. M., LaVigna, G. W., Negri-Shoultz, N., & Fassbender, L. L., (1994). *Progress without punishment-Effective approaches for learners with behavior problems*. New York, New York: Teachers College Press.

Frankenfield, B. (1981). *Instructional modules of assist teacher in generalization programming for moderate, severe and profound mentally retarded students*. Columbus, Ohio: Ohio State University Nisonger Center.

Hilton, A., and Ringlaben, R. (1998). *Best and promising practices in developmental disabilities*. Austin, Texas: pro.ed.

Neel, R.S., & Billingsley, F. F. (1996). *Impact—A functional curriculum handbook for students with moderate to severe disabilities*. Baltimore, Maryland: Paul Brook.

SCHOOL AND FAMILY PARTNERSHIPS

Through a strong school-family partnership, essential IEP skills for the child can be taught in a coordinated manner in all environments. A child with disabilities can only succeed and have a high quality of life when effective school-family partnerships are developed and all participating members become a team.

Maintaining high standards and expectations of performance for students requires expecting high standards from their families. A family should not be sold short because of differences or hardships. Oftentimes, families with the fewest resources make the biggest contribution by sheer determination.

When the parent is not the primary caregiver, the school may want to seek parent permission to establish a partnership with a grandparent, older sibling, or personal care assistant when they play a key role. Periodic updates to the guardian or parent should keep them informed about the outcomes of your joint efforts. Research has confirmed that empowering family members to be knowledgeable advocates is an effective practice. This will also help them to become participating team members in the decision making process for their child's educational program.

The use of a parent/student survey is one example of a useful tool in collecting vital information to develop an appropriate IEP and in establishing effective school-family partnerships. Once this partnership has been established, then all team members can work collaboratively in planning for the child with disabilities. The following are principles that must be accepted by all team members to ensure an effective school-family partnership when developing and implementing a child's IEP:

1. Acknowledge that family members are experts on their children.
2. Listen to what parents and other team members say and respond respectfully.
3. Target skills in the IEP that produce outcomes for the family.
4. Utilize family issues and needs as the motivating factor in the planning process.
5. Trust between all team members is important. Do not generalize; all team members are not the same.

6. Every family and team member has the right to actively participate in planning for his or her child.
7. Family members must live with the outcome of the planning for the child.
8. Language should not be a barrier to communication; time must be spent to facilitate/understand.
9. Empower all team members to freely express ideas.

School-family partnerships take time to build. Ongoing, meaningful, written communication; phone conversations; informal visits at school; and parent group activities throughout the year to assist in developing and solidifying a strong school-family partnership. The educator needs to establish a schedule of regular contacts to maintain the home-school partnership. This may be daily, weekly, or monthly depending upon the needs of the family and the level of trust and cooperation achieved. Contacts should be at regular intervals, even if a pressing issue or ongoing effort is not identified. Typically, one meeting a year will not develop an effective and beneficial partnership. Quarterly contact only reports the current status and is not sufficient for nurturing interdependence and collaboration.

When embarking on a joint effort, family members may feel overwhelmed with adding instructional procedures to already hectic routines. Projected begin and end dates for each commitment should be established realistically. Family members will be more willing to follow through consistently on a short-term undertaking. If your aim is not achieved in the specified interval, staff and family should jointly plan the next course of action. The family may need to take a short break while instruction and assessment continues at school. Later, the family member can visit the school to observe the newly established instructional procedure to replicate at home.

The role of parents or family members should be clearly defined. Family members, in most cases, are not formally trained educators. Their strong emotional bonds and close living proximity will prevent them from using the same objectivity and methodical approach that an educator can use. The role of the family members can be that of “tester” or “reporter.” They can help provide the “real life” opportunities for students to demonstrate or practice emerging skills and then relay areas of independence and areas of difficulty to the school staff. Another role may be to provide rewards or encouragement for school performance. When the teacher reports achievement, or the student brings home an award, the parent can reinforce the acknowledgment with a favored menu item, dessert, or privilege.

If the role of family member is expanded to that of instructor, great care should be taken to ensure the same teaching procedures are used at home and school. In addition to observing the lesson at school, a pictorial storyboard, videotape, or a procedural outline should be provided to the parent for reference at home. With these aids, the parent will be much more confident about implementing the lesson. The teacher should provide a duplicate set of materials, where appropriate.

Resources

- Hilton, A. (1998). A multidimensional model for understanding and working with parents and families. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp.275-286). Austin, Texas: pro-ed.
- Horwath, A. (1998). Empowering family members to work as partners with professionals. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp.287-294). Austin, Texas: pro-ed.
- Parent's Guide to Special Education in Missouri.* (1994). Division of Special Education, Missouri Department of Elementary and Secondary Education.

SENSORY DIET

A sensory diet is a specific schedule of sensory activities designed to help the student remain calm, relaxed and attentive. This strategy, based upon sensory integration theory, is used to accommodate sensory needs and help prevent inappropriate behaviors. Each sensory diet is individualized to meet the student's sensory needs.

Developed by Wilbarger and Wilbarger (1991), the approach is to provide the “just right” combination of sensory input to achieve and maintain optimal levels of arousal and performance in the nervous system. The ability to appropriately orient and respond to sensations can be enhanced by a proper sensory diet. It helps reduce protective or sensory defensive responses that can negatively affect any area of a person's life.

We can break the sensory diet into two parts. Each part is determined by the make up of the students sensory systems.

- Certain types of sensory activities are similar to eating a “*main course*” and are powerful and satisfying. These may include movement, deep touch pressure, and heavy work. These “main courses” have the most significant and long lasting impact on the nervous system.
- Other types of sensory activities are like “*sensory snacks*” or “*mood makers*”. These are activities that affect the central nervous system for a shorter period of time and may include mouth, auditory, visual or smell experiences.

The most successful sensory diets include activities where the student is an active participant. A sensory diet must be customized for individual needs and responses. Teachers and occupational therapists can help evaluate a student's processing abilities and determine what types of sensory activities would be beneficial. When properly designed and implemented, a sensory diet can help prevent many behaviors that interfere with learning, such as self-stimulatory and self-abusive behaviors. When we engage students in sensory experiences on a regular schedule, we can help them to focus, attend, and interact. When a student feels more comfortable and in control, they feel less anxious. Through a sensory diet, we can prevent sensory and emotional overload by satisfying the nervous systems' sensory needs. We can also use it as a recovery technique.

When we develop a profile of sensory needs, along with activities which create calming responses, we know where to turn when the student becomes overwhelmed and out of control. Educators need to take prompt action when they see a student approaching “meltdown”.

Four common *indicators* that a student's sensory processing system needs help are silliness, giddiness, noise making, and aimless running or pacing.

The educator needs to be concerned if the behaviors escalate. They can intensify into repetitive stereotypic behaviors, including self-injury. For others, the escalation may cause students to simply *shut down* by becoming passive, sleepy or self-absorbed.

A sensory diet can be comprised of very specific activities carried out at prescribed times. When writing a sensory diet, list specific times to provide specific activities, as well as methods to compensate for sensory problems during the school day and at home. A pictorial schedule (pictures, words, icons, etc.) or choice board is helpful for the student to learn daily routine and to anticipate when certain activities will occur. Ascertain if calming, organizing, alerting techniques or a combination of all are needed. A clear beginning and ending of activities is necessary. One way is to use an envelope marked "DONE" to place pictures of completed activities. The student develops a sense of structure and predictability through this visual system.

Observed changes as a result of the sensory diet can include lessened anxiety, decreased need for uncontrolled movements, increased calmness, smoother transitions, and decreased displays of discomfort. This allows for more appropriate interactions with peers and adults, and enhances the student's ability to learn.

Resource

Yack, E. Sutton, S. & Aquilla, P. (1998). *Building bridges through sensory integration*.
Ontario: Building Bridges Through Sensory Integration.

SENSORY INTEGRATION

A simple yet effective benefit of obtaining sensory integration is 'gaining a state of calm alertness so that learning may occur.'

Self-regulation problems include hyper or hypo responses to sensory input. This is noted in sensory defensiveness or sensory anxiety through heightened arousal. We do sensory integration *before* the student reaches a hyper or hypo state. Sensory integration helps the student to reach a calm state of alertness so learning can occur.

The *sensory systems* we need to integrate include tactile (touch), vestibular (balance), proprioceptive (body position awareness), auditory (hearing), olfactory (smell) and gustatory (taste).

Signs of sensory integration dysfunction of these systems include:

- Hyper or Hypo sensitivity (or mixed) to sensory stimulation.
- Over-aroused, high activity level, hyper-vigilant.
- Under aroused, low activity level, self-absorbed, passive.
- Avoids sensory input.
- Seeks sensory input.
- Unsure of body position.
- Poor motor planning.
- Poor coordination, inconsistent motor performance, difficulty learning new motor tasks.
- Easily distracted, limited attending skills.

In our intervention with students, we use sensory integration to:

- Regulate arousal levels.
- Increase attention and decrease distractibility.
- Decrease anxiety.
- Increase environmental comfort.
- Decrease stereotypical or self stimulating behaviors.
- Develop internal motivation.

- Facilitate positive interactions with peers and adults.
- Promote communication.
- Improve performance of a variety of skills and increase independence.

For those with dyspraxia (impaired motor planning), it is difficult to learn motor skills. They need repeated practice to learn specific tasks. However, generalization of learning to other similar activities is not possible due to limited body scheme and inadequate memories for movement experiences.

Some students have unusual responses to sensory stimulation. Consultation with an occupational therapist can help teachers to combine task analysis, sensory integration, and adaptations for sensory problems or impaired motor planning. Consultation is used to promote skill development through the use of meaningful activities in the school setting.

Teachers can also consult with an occupational therapist to determine what is interfering with a student's ability to engage appropriately in daily living activities. Poor body awareness and immature coordination can adversely affect one student's ability to learn to eat or dress. But another student may balk at feeding himself because of hypersensitivity of touch. He may not like how the spoon feels in his hand or the texture of the food in his mouth.

To assess these problems, we rely on observation by the staff and parents as well as become familiar with a history of the person's behaviors. Appropriate questionnaires on sensory integration are extremely helpful in pinpointing *areas* of need (visual, tactile, movement, smell, and taste) as well as *priority* of need for help.

When arranging the school day, we can schedule times to provide students with sensory activities to help calm and organize the central nervous system. A visual schedule can help students to anticipate when they will get their sensory needs met. This also helps students to build tolerance to stress and attend to learning tasks longer as time is extended between the sensory integration activities.

Resource

Yack, E. Sutton, S. & Aquilla, P. (1998). *Building bridges through sensory integration*.
Ontario: Building Bridges Through Sensory Integration.

SIZE CUE

1. Place possible responses in front of the student (limit responses).
2. Make the correct response much larger than the other possible responses.
3. Gradually fade to positional cues and then fade the cue out gradually.

Example

The student is to identify a circle. The instructor places a large paper circle in front of the student. A small square is placed next to the large circle. As the student correctly identifies the large circle, its size is reduced until it is the same size as the square.

SMALL GROUP INSTRUCTION

Small group instruction, as generally defined by researchers, occurs when 2-5 students are engaged in learning while the teacher provides instruction. Students learning outcomes (goals) may or may not be the same for each student. A variety of teaching strategies are used to individualize instruction to best teach each student.

Instruction of a small group involves a “teacher-directed” lesson where the instructor is relating directly with the students both individually and as a group. The teacher maintains control over the instructional materials, so students are able to attend to the activity. Students are actively engaged. Students have multiple turns to interact with the instructor and the materials. These characteristics of small group instruction can easily be differentiated from self-instruction, a discovery or exploratory activity, or a task that involves repetitive drill or practice.

Researchers have differentiated small group instruction from large group instruction as being databased, as opposed to activity-based. In large groups, the abilities and educational priorities may be too diverse to maintain a clear focus on the same instructional outcomes for every member of the group. Large group instruction can be useful to introduce a new topic or simply “apply” an acquired skill common to all the members. Small group instruction is more effective when teaching new skills.

Some studies have found heterogeneous grouping to be more beneficial than homogeneous grouping. This is due, in part, to the modeling done by peers in a controlled setting. Generally, students are in close proximity of each other, so peers can easily observe each other interacting with the materials and instructor. While students with severe and profound disabilities do not learn well through “casual observation”, the educational structure of teacher-directed instruction in a small group is effective even for those observing.

Since all of the students are participating in the same activity, they learn and apply the new skills in context. With heterogeneous groups, each student participates with others who are learning the skill on different levels of complexity or difficulty.

The advantages of small group instruction are varied. Obviously, three or four students can be taught in the same amount of time as individual instruction takes with one student. As a result, the lesson does not have to be repeated with each

student, and the instructor has more time to reinforce the lessons with varied activities or present an even broader curriculum.

Small group instruction can also be utilized to teach multiple skills in one session. Group instruction presents opportunities to teach social interaction dynamics, like communication, taking turns, respecting the rights of others, and assisting peers in joint efforts. For some skill domains (language skills, academics, social skills, etc.), students learned faster with higher rates of correct responses when in a small group. In the past, justifications for individualized instruction have been made on the premise of poor attending and poor on-task behavior. When individual instruction and small group instruction were compared, little or no variance was cited in either of these areas.

In addition to the advantages, students who are taught in small groups report:

1. They like school better.
2. They understand their classmates better, even those who are different from themselves.
3. They accept themselves as a unique, but vital, member of the class.
4. And lastly, they are motivated to actively participate in the learning process.

Resources

- Munk, D., Laarhoven, T., Goodman, S. & Repp, A. (1998). Small-group instruction for students with moderate to severe disabilities. In A. Hilton, & R. Ringlaben, *Best and promising practices in developmental disabilities* (pp. 127-138). Austin, Texas: pro.ed.
- Bates, P. (1980). The effectiveness of interpersonal skills on the social skill acquisition of moderately and mildly retarded adults. *Journal of Applied Behavior Analysis*, 13, 237-248.

- Repp, A. C., Karsh, K. G., and Len, M. W. (1990). Discrimination training for persons with developmental disabilities: A comparison of the task demonstration model and the standard prompt hierarchy. *Journal of Applied Behavior Analysis*, 23, 43-52.
- Repp, A. C., and Karsh, K. G. (1992). An analysis of a group teaching procedure for persons with developmental disabilities. *Journal of Applied Behavior Analysis*, 25, 701-712.

TASK ANALYSIS

Task Analysis is a step-by-step breakdown of specific responses necessary to complete a motoric behavior or task. The identification of a sequence of skills needed to perform a task provides the framework for task analysis. Tasks analysis is teaching the student how to do the task in a specific order of steps. There are two types of chaining: *forward* and *backwards*. For those students who easily get frustrated or for those who have a hard time with sequencing, *backward chaining* is recommended. For other students who need the structure of sequencing to learn a task, *forward chaining* is used.

- Forward chaining begins with step one. Before the student can move to step two the student must learn to do step one correctly without prompts or cues. If the entire task analysis is to be performed, then once the student performs step one the teacher will prompt the student through the remaining steps. Once step two is learned, the student must perform steps one and two before prompts or cues can be provided.
- Backward chaining prompts the student through all the steps of the task analysis until the last step and the student completes the last step without prompts or cues. Once the student learns this step the teacher prompts the student through the entire sequence until the last two steps, and so forth until the student can perform all the steps of the task analysis. For students with severe disabilities, this approach usually provides more repetition for learning and the student is able to proceed through the steps faster.
- Total Task – all of the steps are performed at the same time. Prompts are provided where needed. This is used when the student can perform many of the steps, or is close to skill acquisition.
- Break Out - pulls out the step the student finds most difficult. This step is taught until skill acquisition occurs. Then the step is placed back in the task analysis.

Resource

Macfarlane, C. (1998). Assessment: The key to appropriate curriculum and instruction. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (35-60). Austin, Texas: pro.ed.

TRANSITION PLANNING

Transition planning is one of the most important things that an educator, student and parent/guardian can do together. A well-implemented plan will have a profound effect on the quality of life for the student and family after the student leaves the educational setting to enter adult living.

Effective Transition Planning includes the following:

1. An outcome oriented process that promotes movement from school to post-school activities (adult day program, vocational training, supported employment, adult services, participation in independent living).
2. A teaching-learning method that connects community service experiences with academic learning, personal growth and civic responsibility.
3. Future-based planning (at least by the age of 16 years) that embeds essential skills and uses vocational evaluation strategies in combination with specific training that is focused on self-determination.
4. Developing and implementing strategies with the student and the family to connect with local agencies to enhance transition related outcomes.
5. Opportunities for personal development by students (recreation/leisure, community functioning, social skills/communication skills, and motor planning in integrated settings).
6. Options that focus on the student's interest and aptitudes in an essential skills curriculum.
7. Longitudinal planning that leads to successful community integration and addresses vocational goals, as well as independent living.
8. Active involvement by a network of family and friends.

9. Opportunities for community service within the curriculum that establishes relationships that can continue after graduation.
10. Opportunities to generalize learning and choice making in integrated setting in the community (Off Campus Instruction).

Resource

Brown, J., Zager, D., Brown, P., & Price, L. (1998). Transition practices for students with mental retardation and developmental disabilities. In A. Hilton & R. Ringlaben, *Best and promising practices in developmental disabilities* (225-236). Austin, Texas: pro.ed.

VISUAL CUE

1. Place possible responses in front of the student (limit responses).
2. Provide the correct response in bold print and/or highlight to draw attention to the correct response.
3. Repeat procedure until the highlighted visual cue can be gradually faded in intensity.

Example

The student is to answer questions using photographs of recent events. The instructor asks a question and then shines the light from a flashlight on the correct picture/response. Smaller flashlights are used until the highlight is not needed.